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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,998

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Russell Vaughan Meddes

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MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP  
300 S. WACKER DRIVE  
32ND FLOOR  
CHICAGO, IL 60606

EXAMINER

RO, YONG-SUK

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/574,998	<b>Applicant(s)</b> MEDDES ET AL.	
	<b>Examiner</b> Yong-Suk Ro	<b>Art Unit</b> 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/4/2010 has been entered.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in United Kingdom on 10/10/2003. It is noted, however, that applicant has not filed a certified copy of the 0323673.4 application as required by 35 U.S.C. 119(b).

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 16'. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

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the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

4. . The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Brieger (4756371) in view of Willis et al. (5564499)

Brieger discloses a similar device, comprising:

Re claims 1, 9:

- A carrier T/60 for at least one shaped charge S<sub>H</sub>, S<sub>A</sub> (Col. 6:40, 46-48, Fig. 5).
- The carrier being disposable in use within a well bore 11.
- The carrier comprising a housing 60 at least partially formed from a composite material, the composite material being non-frangible in normal use (Col. 6:43, Figs. 5, 6). It is noted that the steel is composite material consisting of iron with carbon, and non-frangible. Fig. 6 depicts the housing 60 remains intact after firing of shaped charge.

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- The composite material being arranged substantially to contain debris 72 created within the carrier T as a result of firing of the at least one shaped charge (Fig. 6, Col. 6:42-45, 58-62).

Bierger teaches perforation apparatus with steel housing/carrier that contains debris after firing of shaped charge. Bierger does not teach housing/carrier that is not steel. Wills et al. teach the charge carrier 1 can be plastic composite that is a loaded polymer matrix (i.e., fig. 1, col.3:23-26) and contain debris after firing of shaped charge (fig. 4 depicts carrier 1 remains intact after firing). Because both Bierger and Wills et al. teach the charge carrier/housing that contains debris after firing, it would have been obvious to one skilled in the art to substitute charge carrier/housing for the other to achieve the predictable result of containing the debris after firing.

Willis et al. further disclose,

Re claim 6:

- The housing comprises a thin-walled metal cylinder 1 (i.e., fig. 1, col. 3:24).

Brieger further teaches,

Re claim 4:

- The housing 60 is a composite material housing (Col. 6:43). It is noted that the steel is composite material consisting of iron with carbon.

Re claim 5:

- The housing comprises a thin-walled cylinder 62 (Fig. 5).

Re claim 7:

- the carrier T/60 has at least one port 68<sub>A</sub>, 68<sub>H</sub> formed therein (Fig. 5)

Re claim 8:

- A plurality of ports are distributed along the longitudinal extent of the carrier.

(Fig. 5).

Re claims 10-11: Brieger and Willis et al. fails disclose composite material including longitudinally arranged fibers in claim 10, and composite material including circumferentially arranged fibers in claim 11.

However, it is noted that the mechanical property, such as tension and compression, of composite material depends on the arrangement of fiber. The case law has held that “a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation”. In *re Antonie*, 559 F2d, 618, 195USPQ 6 (CCPA 1977).

Thus, the examiner takes OFFICIAL NOTICE that it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the fiber arrangement longitudinally or circumferentially by routine optimization of fiber, in order to achieve optimum mechanical properties of the composite material.

Re claim 12: Brieger and Willis et al. fails disclose circumferentially arranged fibers have respective predetermined tensions.

However, it is noted that the mechanical property, such as tension and compression, of composite material depends on the arrangement of fiber. The case law has held that “a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of

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the optimum or workable ranges of said variable might be characterized as routine experimentation". In *re Antonie*, 559 F2d, 618, 195USPQ 6 (CCPA 1977).

Thus, the examiner takes OFFICAL NOTICE that it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the fiber arrangement circumferentially by routine optimization of fiber, in order to have ideal predetermined tension of the composite material.

Brieger further teaches,

Re claim 13:

- A perforating gun T comprising a carrier 60 (Fig. 5).

Brieger further discloses a similar method, comprising:

Re claim 14:

- Providing a perforating gun T (Fig. 5).
- Positioning the perforating gun T in the well borehole 11 (Fig. 5).
- Perforating the borehole by firing the perforating gun (Fig. 6).
- Retrieving debris 72 resulting from the step of perforating by recovering the carrier 60 of the perforating gun T (Fig. 6), the carrier T/60 containing debris resulting from the firing (Col. 6:42-45, 58-62).

Re claim 15:

- The fluid is one or more of hydrocarbons, water, and steam (Col. 3:64-65).

6. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brieger (4756371) and Willis et al. (5564999) in view of Xu et al. (6422148).

Re claim 2: Brieger discloses inner housing 62 encompassed by the composite material outer housing T/60.

Willis et al. disclose a housing I is made of composite material that is a reinforced polymer material (i.e., fig. 1, col. 3:24-26) and applied as outer housing of Brieger above.

Brieger and Willis et al. are silent on inner housing overwrapped by outer housing.

Xu et al. disclose the inner housing 23 overwrapped by composite material outer housing 20 (i.e., fig. 2, Col. 5:26-27).

Thus, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made to employ the housing structure as taught by of Xu et al. in the combination of Brieger and Willis et al. in order to have inner housing overwrapped by reinforced polymer outer composite material, for optimum performance of the perforating gun.

Re claim 3: Brieger, Willis et al. and Xu et al. are silent on the metal inner housing. However, Brieger disclose the inner housing 62 remains intact after firing of shaped charge (Fig. 6). It implies that the inner hosing is the rigid material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the rigid material such as metal for the inner housing of carrier in order to achieve optimum performance of the perforating gun, since it has been held to be within the general skill of a worker in the art to select to known



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material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Further, regarding the Examiner's taking of OFFICIAL NOTICE with respect to claims 10-12, it is noted that this position was not traversed and as such has been repeated and is held to be agreed to by Applicant.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong-Suk Ro whose telephone number is 571-270-5466. The examiner can normally be reached on M-F, 9hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer H Gay/  
Primary Examiner, Art Unit 3676

/Yong-Suk Ro/  
Examiner  
Art Unit 3676